

## CLAIMS

(1) A liquid mixture characterized by comprising:  
carbon nanotubes each having a functional group; and  
a crosslinking agent capable of prompting a crosslinking  
reaction with the functional group.

(2) A liquid mixture according to claim 1, characterized in  
that each of the functional groups comprises -COOR (where R represents  
a substituted or unsubstituted hydrocarbon group).

(3) A liquid mixture according to claim 2, characterized in  
that the crosslinking agent comprises a polyol.

(4) A liquid mixture according to claim 2, characterized in  
that the crosslinking agent comprises glycerin and/or ethylene  
glycol.

(5) A liquid mixture according to claim 1, characterized by  
further comprising a solvent.

(6) A liquid mixture according to claim 5, characterized in  
that the crosslinking agent further functions as a solvent.

(7) A liquid mixture according to claim 1, characterized in that:

the functional groups comprise at least one functional group selected from the group consisting of -OH, -COOH, -COOR (where R represents a substituted or unsubstituted hydrocarbon group), -COX (where X represents a halogen atom), -NH<sub>2</sub>, and -NCO; and

the crosslinking agent comprises a crosslinking agent capable of prompting a crosslinking reaction with the selected functional groups.

(8) A liquid mixture according to claim 1, characterized in that:

the crosslinking agent comprises at least one crosslinking agent selected from the group consisting of a polyol, a polyamine, a polycarboxylic acid, a polycarboxylate, a polycarboxylic acid halide, a polycarbodiimide, and a polyisocyanate; and

each of the functional groups comprises a functional group capable of prompting a crosslinking reaction with the selected crosslinking agent.

(9) A liquid mixture according to claim 1, characterized in that:

the functional groups comprise at least one functional group selected from the group consisting of -OH, -COOH, -COOR (where R

represents a substituted or unsubstituted hydrocarbon group), -COX (where X represents a halogen atom), -NH<sub>2</sub>, and -NCO;

the crosslinking agent comprises at least one crosslinking agent selected from the group consisting of a polyol, a polyamine, a polycarboxylic acid, a polycarboxylate, a polycarboxylic acid halide, a polycarbodiimide, and a polyisocyanate; and

the functional groups and the crosslinking agent are respectively selected so that a combination of the selected functional groups and crosslinking agent is capable of prompting a mutual crosslinking reaction.

(10) A liquid mixture according to claim 1, characterized in that the crosslinking agent comprises a not-self-polymerizable crosslinking agent.

(11) A structure comprising:

carbon nanotubes each having a functional group; and

a crosslinking agent capable of prompting a crosslinking reaction with the functional group, characterized in that the structure is obtained by:

supplying the carbon nanotubes and the crosslinking agent;

and

curing the whole to mutually crosslink the carbon nanotubes via crosslinked sites each formed through a crosslinking reaction

between the functional group of each of the carbon nanotubes and the crosslinking agent.

(12) A structure according to claim 11, characterized in that the supply of the carbon nanotubes each having a functional group and the crosslinking agent capable of prompting a crosslinking reaction with the functional group is performed by supplying a liquid mixture containing the carbon nanotubes and the crosslinking agent.

(13) A structure according to claim 11, characterized in that each of the functional groups comprises  $\text{-COOR}$  (where R represents a substituted or unsubstituted hydrocarbon group).

(14) A structure according to claim 13, characterized in that the crosslinking agent comprises a polyol.

(15) A structure according to claim 13, characterized in that the crosslinking agent comprises glycerin and/or ethylene glycol.

(16) A structure according to claim 12, characterized in that the liquid mixture further contains a solvent.

(17) A structure according to claim 16, characterized in that the crosslinking agent further functions as a solvent.

(18) A structure according to claim 11, characterized in that the crosslinking agent comprises a not-self-polymerizable crosslinking agent.

(19) A structure according to claim 11, characterized in that each of the crosslinked sites comprises a crosslinking structure in which residues of the functional groups remaining after the crosslinking reaction are connected together with a connecting group employing hydrocarbon as its skeleton.

(20) A structure according to claim 19, characterized in that the connecting group employs as its skeleton hydrocarbon having 2 to 10 carbon atoms.

(21) A method of forming a structure, characterized by comprising:

a supplying step of supplying a substrate with carbon nanotubes each having a functional group and a crosslinking agent capable of prompting a crosslinking reaction with the functional group; and

a curing step of curing the whole by crosslinking the functional groups of the carbon nanotubes after the supply by using the crosslinking agent.

(22) A method of forming a structure according to claim 21, characterized by further comprising a mixing step of mixing the carbon nanotubes each having a functional group with the crosslinking agent capable of prompting a crosslinking reaction with the functional group to prepare the liquid mixture prior to the supplying step.

(23) A method of forming a structure according to claim 22, characterized by further comprising an adding step of introducing functional groups to the carbon nanotubes prior to the mixing step.

(24) A method of forming a structure according to claim 23, characterized in that the adding step comprises a step of introducing a carboxyl group into a carbon nanotube to esterify the carbon nanotube.

(25) A method of forming a structure according to claim 21, characterized in that each of the functional groups comprises -COOR (where R represents a substituted or unsubstituted hydrocarbon group).

(26) A method of forming a structure according to claim 21, characterized in that:

each of the functional groups comprises -COOR (where R represents a substituted or unsubstituted hydrocarbon group); and the crosslinking agent comprises a polyol.

(27) A method of forming a structure according to claim 21, characterized in that:

each of the functional groups comprises -COOR (where R represents a substituted or unsubstituted hydrocarbon group); and the crosslinking agent comprises glycerin and/or ethylene glycol.

(28) A method of forming a structure according to claim 21, characterized in that:

each of the functional groups comprises -COOR (where R represents a substituted or unsubstituted hydrocarbon group); the crosslinking agent comprises a polyol; and the curing step comprises a step of curing by heating.

(29) A method of forming a structure according to claim 21, characterized in that the liquid mixture further contains a solvent.

(30) A method of forming a structure according to claim 29, characterized in that the crosslinking agent further functions as a solvent.

(31) A liquid mixture according to claim 21, characterized in that:

the functional groups comprise at least one functional group selected from the group consisting of -OH, -COOH, -COOR (where R represents a substituted or unsubstituted hydrocarbon group), -COX (where X represents a halogen atom), -NH<sub>2</sub>, and -NCO; and

the crosslinking agent comprises a crosslinking agent capable of prompting a crosslinking reaction with the selected functional groups.

(32) A liquid mixture according to claim 21, characterized in that:

the crosslinking agent comprises at least one crosslinking agent selected from the group consisting of a polyol, a polyamine, a polycarboxylic acid, a polycarboxylate, a polycarboxylic acid halide, a polycarbodiimide, and a polyisocyanate; and

each of the functional groups comprises a functional group capable of prompting a crosslinking reaction with the selected crosslinking agent.

(33) A liquid mixture according to claim 21, characterized in that:

the functional groups comprise at least one functional group



selected from the group consisting of -OH, -COOH, -COOR (where R represents a substituted or unsubstituted hydrocarbon group), -COX (where X represents a halogen atom), -NH<sub>2</sub>, and -NCO;

the crosslinking agent comprises at least one crosslinking agent selected from the group consisting of a polyol, a polyamine, a polycarboxylic acid, a polycarboxylate, a polycarboxylic acid halide, a polycarbodiimide, and a polyisocyanate; and

the functional groups and the crosslinking agent are respectively selected so that a combination of the selected functional groups and crosslinking agent is capable of prompting a mutual crosslinking reaction.

(34) A method of forming a structure according to claim 21, characterized in that the crosslinking agent comprises a not-self-polymerizable crosslinking agent.